

CLAIMS

We claim:

- Sub 25
1. A method of handling errors in a system for receiving packet streams, the method comprising the steps of:
enabling an error condition that identifies an error as being a packet stream that is scrambled;
determining if a received packet is scrambled; and
performing an error recovery operation.
 - Sub 61
 2. The method of claim 1, wherein the packet stream is a transport stream packet.
 3. The method of claim 1, wherein the packet stream is a packetized elementary stream.
 - Sub 46
 4. The method of claim 1, wherein as a result of the step of performing an error recovery operation, the received packet is disregarded.
 - Sub 61
 5. The method of claim 4, wherein the received packet being disregarded includes the received packet being dropped.
 6. The method of claim 4, wherein the packet stream packet being disregarded includes the received packet being ignored.
 - Sub 46
 7. The method of claim 1, wherein the step of enabling an error condition includes enabling the error condition by asserting a register bit.
 8. The method of claim 1, wherein the step of determining includes determining if the header information of the received packet indicates scrambling.

9. The method of claim 1, wherein the step of determining includes determining if the payload information of the packet stream packet payload is scrambled.
10. The method of claim 9, wherein the header information includes transport stream payload data.
11. The method of claim 9, wherein the header information includes packetized elementary stream payload data.
12. A method of handling errors in a system for receiving packet streams, the method comprising the steps of:
enabling an error condition that identifies an asserted error in hardware indicator in a packet as a recognized error;
receiving the packet;
determining if the received packet includes an asserted error indicator; and
performing an error recovery operation when the packet includes an asserted error indicator.
13. The method of claim 12, wherein the packet is a transport packet.
14. The method of claim 12, wherein the packet is a packetized elementary stream.
15. The method of claim 12, wherein the step of enabling an error condition includes enabling the error condition by asserting a register bit.
16. The method of claim 12, wherein the error recovery step includes:
sending an error code to a video decoder to indicate the received packed has an asserted error indicator.
17. The method of claim 16, wherein the error code sent to the video decoder includes sending the error code in a compressed video bit stream.

- Sub 12
18. The method of claim 12 further comprising the step of:
maintaining an asserted error count, whereby the count is incremented when the received packet includes an asserted error indicator;
maintaining a packet count, whereby the packet count is incremented when the packet is received; and
determining an asserted error rate based upon the asserted error count and the packet count.
19. The method of claim 18, wherein the step of determining an asserted error code is performed in response to an external request.
- Sub 20
20. A method of handling errors in a system for receiving a packet stream, the method comprising the steps of:
enabling an error condition that identifies an continuity discrepancy as a recognized error;
determining if a continuity discrepancy exists by the substeps of:
receiving a continuity count from a first packet;
receiving a continuity count from a second packet;
determining if the continuity discrepancy exists based upon the continuity counts from the first and second packet; and
performing an error recovery operation when a discrepancy exists.
21. The method of claim 20 further comprising the step of:
maintaining a continuity discrepancy count, whereby the count is incremented when a continuity discrepancy is detected between the first and second packet;
maintaining a packet count, whereby the packet count is incremented to indicate the first and second packets are received; and
determining an continuity error rate based upon the continuity discrepancy count and the packet count.

Sub
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22. The method of claim 21, wherein the step of determining is performed in response to an external request.

23. The method of claim 21 further comprising the step of:
generating an error indicator for an first external device.

Sub
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24. The method of claim 23, where external devices include a host processor as a first external device, MPEG video decoding engine as a second external device, and the first and second packets contain video data.

Sub
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25. A method of handling errors in a system for receiving packetized elementary streams, the method comprising the steps of:
enabling an error condition that identifies syntax errors in a packetized elementary stream as a recognized error;
determining if a syntax error exists by the substeps of
receiving a header portion of a packetized elementary stream;
determining if a predetermined syntax condition of the header portion is met,
where the syntax error exists if the syntax conditions are not met; and
performing an error recovery operation when a syntax error exists.

Sub
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26. The method of claim 25, where the predetermined syntax condition is a fixed bit pattern.

27. The method of claim 25, where the predetermined syntax condition is a value range.

28. The method of claim 27, where the value range indicates a legal field length.

29. The method of claim 25, where the predetermined syntax condition is based on a previous packet.

30. The method of claim 29, where the predetermined syntax condition is non-repeated packets.
31. The method of claim 25 further comprising the step of:
generating an error indicator for a video engine when the packetized elementary stream contains video data.
32. A method handling errors in a system for receiving packet stream packets, the method comprising this steps of:
receiving at least a portion of a packet;
determining if an error occurred based upon the portion of the packet;
sending an error indicator to video decoder processor when it is determined the error occurred.
33. The method of claim 32, wherein the step of receiving at least a portion of a packet includes the portion of a packet including a transport packet header.
34. The method of claim 33, wherein the step of receiving at least a portion of a packet includes the portion of the packet being a packetized elementary stream header.
35. The method of claim 32, wherein the step of determining an error occurred includes determining if an error bit in the at least a portion of the packet is enabled.
36. The method of claim 32, wherein the step of determining if an error occurred includes determining if an error occurred based upon at least a portion of the packet.
37. The method of claim 32, wherein the step of determining if an error occurred includes determining if an error occurred based upon a continuity counter.

38. The method of claim 32, wherein the step of sending an error indicator to the MPEG video decoder includes sending the error code when at least a portion of the packet is at least a portion of a video packet.

39. The method of claim 32, wherein the step of sending an error indicator includes sending the error code in a video stream.

40. The method of claim 40, wherein the step of sending an error indicator includes sending the error code in a compressed video stream.

41. The method of claim 41, wherein the step of sending an error indicator includes the error code having a hexadecimal value of 0x000001B4.

42. The method of claim 32 further comprising the step of:
determining if an error occurred based upon an error signal.

43. The method of claim 41 further comprising the step of:
determining if the error occurred based upon an error signal.

44. The method of claim 42, wherein the step of sending an error indicator further includes the sub-step of sending the error indicator when the error signal is asserted after a packet identifier is received as a portion of the packet.

45. A system for handling packet stream errors, the system comprising:

- an input for receiving at least a portion of a packet;
- a parser having an input coupled receive the at least a portion of the packet, and having an output;
- an error generator having an input coupled to the output of the parser, and having an output to provide an error indicator; and
- a compressed video data node coupled to the output of the error generator.